



Name _____

Date _____

Study Guide

KEL

The Counting Principle

The Counting Principle uses multiplication to find the number of possible outcomes.

If event M can occur in m ways and is followed by event N that can occur in n ways, then the event M followed by N can occur in $m \times n$ ways.

Example Pinky's Pizza serves 11 different kinds of pizza with 3 choices of crust and in 4 different sizes. How many different selections are possible?

Apply the Counting Principle.

number of kinds		number of crusts		number of sizes		possible selections
11	\times	3	\times	4	$=$	132

There are 132 possible pizza selections.

Use the Counting Principle to find the total number of outcomes in each situation.

1. The nursery has 14 different colored tulip bulbs. Each color comes in dwarf, average, or giant size. How many different kinds of bulbs are there?

42

14×3

2. The type of bicycle Elena wants comes in 12 different colors with 12 different colors of trim. There is also a choice of curved or straight handlebars. How many possible selections are there?

288

$12 \times 12 \times 2$

3. At a banquet, guests were given a choice of 4 entrees, 3 vegetables, soup or salad, 4 beverages, and 4 desserts. How many different selections were possible?

384

$4 \times 3 \times 2 \times 4 \times 4$
 E veg S/S B D

4. Ms. Nitobe is setting the combination lock on her briefcase. If she can choose any digit 0–9 for each of the 6 digits in the combination, how many possible combinations are there?

1,000,000

$10 \times 10 \times 10 \times 10 \times 10 \times 10$